(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/064011 A3

(51) International Patent Classification[7]: G06F 7/72

(21) International Application Number:
PCT/IB2003/006267

(22) International Filing Date:
19 December 2003 (19.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03100032.6 10 January 2003 (10.01.2003) EP

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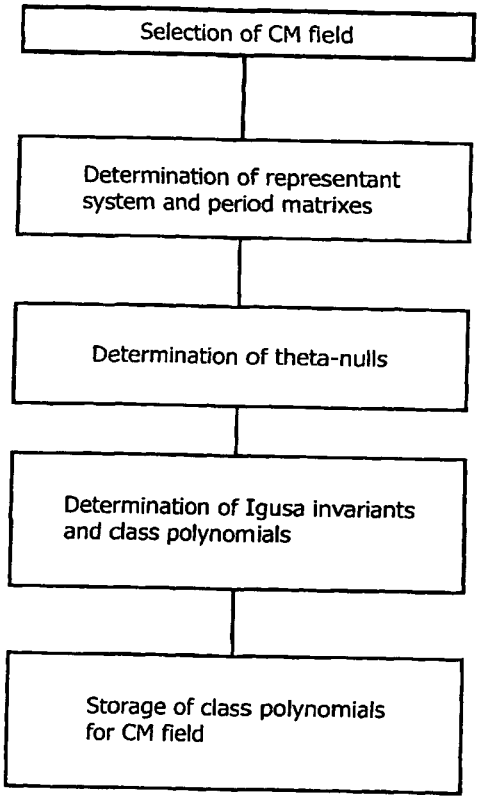
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,

*[Continued on next page]*

(54) Title: METHOD OF CONSTRUCTING HYPERELLIPTIC CURVES SUITABLE FOR CRYPTOGRAPHIC PURPOSES AND CRYPTOGRAPHIC APPARATUS USING SUCH A METHOD




(57) Abstract: To provide a method for determining secure hyperelliptic curves quickly, it is proposed that suitable hyperelliptic curves be constructed using the complex multiplication method. The inventive method generates hyperelliptic curves, suitable for cryptographic applications, of genus 2 over finite fields having large characteristics. The invention further provides a cryptographic apparatus making use of a method as described beforehand can advantageously be used for encrypting and decrypting of messages for the secure exchange of information over public networks between senders and receivers. With such a cryptographic apparatus, messages and documents due for exchange can be encrypted fast and easily in an authentication procedure for the senders and receivers.

WO 2004/064011 A3

SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— *with international search report*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

**(88) Date of publication of the international search report:**
29 December 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

In onal Application No
PCT/IB 03/06267

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F7/72

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | A. WENG: "Constructing Hyperelliptic curves of genus 2 suitable for cryptography" MATHEMATICS OF COMPUTATION, vol. 72, no. 241, 3 May 2002 (2002-05-03), pages 435-458, XP008038228 AMERICAN MATHEMATICAL SOCIETY, USA ISSN: 0025-5718 the whole document | 1-20 |

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| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 5 November 2004 | 19/11/2004 |

| Name and mailing address of the ISA | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL – 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016 | Verhoof, P |